

Implementation of schemes for development of non-conventional energy

477. SHRI N.R. GOVINDARAJAR: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the details of schemes implemented for the development of non-conventional energy in the country during the last three years, State-wise;

(b) the incentives given/proposed to be given by Government to each State to encourage investment in non-conventional energy sources, particularly to Tamil Nadu;

(c) whether Government have made any study to identify Grid Interactive Renewable Power State; and

(d) if so, the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) State-wise details of deployment of various renewable energy systems/devices under major renewable energy schemes/programmes of this Ministry during the last three years, i.e. 2003-04 to 2005-06 are given in the enclosed Statement-I (See below).

(b) To encourage investment in renewable energy in the country, including Tamil Nadu, fiscal and financial incentives are being provided that include capital/interest subsidy, accelerated depreciation, concessional duties and relief from taxes to attract private investment. These apart, preferential tariff for grid interactive power is being given in most potential States. District-level Advisory Committees have been also constituted in States to facilitate effective coordination of renewable energy schemes/programmes in the country.

(c) and (d) State-wise details of estimated potential for grid-interactive renewable power generation are given in the enclosed Statement-II.

Statement-I

State-wise details of deployment of various renewable energy systems/devices under major schemes/programmes during the last 3 years, i.e., 2003-04 to 2005-06

| Sl. No. | State/UT | Biogas Plants | | SPV Pumps | | Aero-generators | | Wind Pumps | | RVE | | Small Hydro Power | | Grid-interactive Power | | Solar Photovoltaic Systems/Devices* | |
|---------|------------------|---------------|------|-----------|------|-----------------|--------|------------|--------|-------|------|-------------------|------|------------------------|----|-------------------------------------|------|
| | | Nos. | Nos. | Nos. | Nos. | kW | Nos. | Nos. | Nos. | Nos. | Nos. | MW | MW | MW | MW | SLS | SL |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1. | Andhra Pradesh | 44523 | 16 | | 1 | | 23.20 | 28.50 | 119.20 | 19.75 | 85 | 85 | 6000 | 3000 | | | |
| 2. | Assam | 457 | | | | 73 | 11.93 | | | | 133 | 520 | | | | | |
| 3. | Bihar | 3298 | | | | 3 | 0.11 | | | | | | | | | | |
| 4. | Chhattisgarh | 396 | 11 | | 4 | | 5.50 | | | | 200 | 990 | 5490 | | | | |
| 5. | Goa | 9312 | 9 | | | 205 | 10.00 | | 16.50 | | 172 | 3222 | | | | | |
| 6. | Gujarat | 254 | | 25 | | | | | | | 105 | 116 | | | | | |
| 7. | Haryana | 19289 | 42 | | 209 | 2 | 165.06 | | | | 240 | 2400 | | 5 | | | |
| 8. | Himachal Pradesh | 3461 | 201 | | | | 14.40 | | 2.00 | | 240 | 3600 | | | | | |
| 9. | Jammu & Kashmir | 647 | | | | | 38.84 | | | | 300 | 1000 | | | | | |
| 10. | Jharkhand | 33 | 21 | | | | 7.50 | | | | | | | | | | |
| 11. | Karnataka | 558 | | | | 53 | | | | | 248 | | | | | | |
| 12. | Kerala | 30577 | 117 | 2 | 5 | | 140.75 | 460.18 | 115.10 | | 210 | 2786 | | | | | |
| 13. | Madhya Pradesh | 14120 | 73 | | | | 12.60 | | | | | | | | | | 3000 |
| 14. | Maharashtra | 23568 | 9 | | | | 2.20 | 17.65 | 1.00 | | 132 | 785 | | | | | |
| 15. | Manipur | 26177 | 39 | 217 | | | 588.50 | 11.50 | | | 103 | 104 | | | | | |
| 16. | Mizoram | 102 | | | | 106 | | | | | | | | | | | |
| 17. | Meghalaya | 755 | 14 | | | 25 | | | | | | | | | | | |
| 18. | Nagaland | 455 | | | | 7 | | | | | | | | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|--------|------------------------|--------|------|-----|-----|------|--------|---------|--------|-------|------|-------|-------|------|
| 21. | Punjab | 6384 | 392 | | | | 15.15 | | 6.00 | 1.00 | 371 | 310 | | 25 |
| 22. | Rajasthan | 185 | 20 | | | | 0.00 | 278.84 | 15.30 | | 100 | 10466 | | |
| 23. | Sikkim | 1024 | | | | | 3.00 | | | | 20 | 9750 | | 15 |
| 24. | Tamil Nadu | 5232 | 69 | | | | 1.30 | 1904.28 | 67.00 | 1.75 | | | 8000 | |
| 25. | Tripura | 325 | 15 | | | 16 | | | | | | | | |
| 26. | Uttar Pradesh | 21195 | 308 | | | | 3.60 | | 75.00 | 5.00 | 400 | | | |
| 27. | Uttaranchal | 2279 | 16 | | | 216 | 10.85 | | | | | 4776 | | |
| 28. | West Bengal | 40218 | | 18 | | 451 | 6.02 | | | | 150 | | | |
| 29. | Andaman and Nicobar | | | | | | | | | | | | 11000 | |
| 30. | Chandigarh | | | | | | | | | | | | | |
| 31. | Dadra and Nagar Haveli | | | | | | | | | | | | | |
| 32. | Daman and Diu | | | | | | | | | | | | | |
| 33. | Delhi | | 3 | | | | | | | | | | | 10 |
| 34. | Lakshadweep | | | | | | | | | | | | | |
| 35. | Pondicherry | | | | | | | | | | | | 2000 | |
| 36. | Others | 27851 | | | | | | | | | | 2374 | | 25 |
| TOTAL: | | 308891 | 1376 | 262 | 221 | 1157 | 307.15 | 3443.00 | 428.60 | 27.50 | 3313 | 46714 | 36577 | 3080 |

SPV=Solar Photo-Voltaic; SLS=Street Lighting Systems; HLS=Home Lighting Systems; SL=Solar Lanterns; PP=Power Plants
 RVE=Remote Village Electrification; kW=kilo-Watt; kWp=kilo Watt peak; MW=Mega Watt.

Statement-II

State-wise details of estimated potential for renewable energy, including grid-interactive renewable power generation

| Sl. No. | States/UTs | Wind Power 1 (MWe) | Small Hydro Power 2 (MWe) | Cogeneration 3 (MWe) | Waste to Energy (MSW) 4 (MWe) | Cumulative Estimated Potential 5 (MWe) |
|---------|-------------------|--------------------|---------------------------|----------------------|-------------------------------|--|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1. | Andhra Pradesh | 8275 | 255 | 200 | 123 | 8853 |
| 2. | Arunachal Pradesh | 0 | 1059 | 0 | 0 | 1059 |
| 3. | Assam | 0 | 148 | 5 | 8 | 131 |
| 4. | Bihar | 0 | 194 | 200 | 62 | 456 |
| 5. | Chhattisgarh | 0 | 180 | 0 | 20 | 78 |
| 6. | Goa | 0 | 3 | 5 | 0 | 8 |
| 7. | Gujarat | 9675 | 157 | 200 | 112 | 10144 |
| 8. | Haryana | 0 | 30 | 0 | 23 | 53 |
| 9. | Himachal Pradesh | 0 | 1625 | 0 | 1 | 1626 |
| 10. | Jammu & Kashmir | 0 | 1207 | 0 | 10 | 180 |
| 11. | Jharkhand | 0 | 170 | 0 | 0 | 1207 |
| 12. | Karnataka | 6620 | 653 | 300 | 151 | 7724 |
| 13. | Kerala | 875 | 467 | 10 | 37 | 1389 |
| 14. | Madhya Pradesh | 5500 | 336 | 25 | 92 | 5953 |
| 15. | Maharashtra | 3650 | 599 | 1000 | 287 | 5536 |
| 16. | Manipur | 0 | 106 | 0 | 2 | 108 |
| 17. | Meghalaya | 0 | 182 | 0 | 2 | 184 |
| 18. | Mizoram | 0 | 190 | 0 | 2 | 192 |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----|----------------------------|-------|-------|------|------|-------|
| 21. | Punjab | 0 | 65 | 150 | 45 | 260 |
| 22. | Rajasthan | 5400 | 27 | 10 | 62 | 5499 |
| 23. | Sikkim | 0 | 203 | 0 | 0 | 203 |
| 24. | Tamil Nadu | 3050 | 339 | 350 | 151 | 3890 |
| 25. | Tripura | 0 | 10 | 0 | 2 | 11 |
| 26. | Uttar Pradesh | 0 | 267 | 1000 | 176 | 1443 |
| 27. | Uttaranchal | 0 | 1478 | 0 | 5 | 1483 |
| 28. | West Bengal | 450 | 183 | 10 | 147 | 790 |
| 29. | Andaman & Nicobar | 0 | 6 | 0 | 0 | 6 |
| 30. | Chandigarh | 0 | 0 | 0 | 6 | 6 |
| 31. | Dadra & Nagar Haveli | 0 | 0 | 0 | 0 | 0 |
| 32. | Daman & Diu | 0 | 0 | 0 | 0 | 0 |
| 33. | Delhi | 0 | 0 | 0 | 131 | 131 |
| 34. | Lakshadweep | 0 | 0 | 0 | 0 | 0 |
| 35. | Pondicherry | 0 | 0 | 10 | 3 | 13 |
| | Biomass Potential 6 | | | 0 | 1020 | 16000 |
| | Industrial Waste Potential | | | | | 1020 |
| | TOTAL: | 45195 | 10476 | 3500 | 2700 | 77720 |

*Technical potential less than 15,000 MW

Note:

1. Potential based on areas having wind power density (wpd) greater than 200 Watts/m² land availability @ 1 per cent in potential areas, and wind farm area requirement @ 12 ha/MW. In line with international practice to take sites having wpd greater than 300 W/m² for grid-interactive power, this potential would drop. However, off-grid applications are possible even in areas having lower wpds.
2. Identified sites having technical feasibility, not all of which may be commercially exploitable. Technical hydro potential of sites upto 25 MW station capacity has, however, been placed at 15,000 MWe.
3. With new sugar mills and modernization of existing ones, technical potential is assessed at 5000 MWe, not all of which may be commercially exploitable. Furthermore, several sugar companies/cooperatives are unable to develop bankable projects on account of their financial and liquidity positions.
4. With expansion of urban population post census 2001, current technical potential assessed at 3000 MWe. However, subsidy disbursement under the programme has been kept in abeyance on the orders of the Supreme Court until final disposal of a PIL seeking composting as the preferred route for MSW disposal.
5. Accordingly, renewable energy technical potential has been placed at 84,000 MWe, not all of which may be suitable for grid-interactive power.
6. Biomass atlas under preparation which will more accurately assess State-wise renewable energy potential from agro-residues.

Proposal for installation of solar heaters

478. SHRI S.M. LALJAN BASHA:
SHRI C. PERUMAL:

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether Government have a proposal to install solar heater in 3.5 million homes;